Habitat Observation Factsheet

Observations on the physical condition of the substrate or bottom of waterbody can be useful in determining the habitat type present and if watershed stressors have degraded its ability to support a healthy community of aquatic biota.

Observations Types

- **Substrate composition** – Proportion of different size classes present. In sites that are subject to upstream disturbance, the relative proportion of fine sediment types such as clay, silt, or sand can increase.
- **Embeddedness** – Percent of cobble sized substrate that is buried by these fine materials.
- **Canopy %** –Proportion of vegetative cover that shades the sun's rays over the river. This shading maintains cools temperatures, and also provides a food source to the stream in the form of insects that drop from branches into the water. More canopy is always better, though large rivers such as the Missisquoi or Winooski are naturally too wide to have shading across the river.

Assessments

A naturally hard bottomed substrate that is relatively free of fine sediments and has low embeddedness provides for habitat that supports healthy aquatic biota. When hard-bottom streams become dominated by fine materials, the increased embeddedness degrades otherwise good habitat, thereby affecting macroinvertebrate and fish populations.

Some streams, such as slowly-flowing low-elevation winding streams may naturally have only fine sediment, and Watershed Management Division biologists are working to develop macroinvertebrate monitoring approaches for these naturally occurring systems.

Additional Information

A more detail description of the assessment methodology can be found in Section 6.4.3 of the Watershed Management Division's Field Methods Manual:
http://dec.vermont.gov/sites/dec/files/wsm/mapp/docs/bs_fieldmethodsmanual.pdf